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<i>Large Coating, Printing, Aerospace and Chemical Operations Team</i>	PROCESSED BY	SMP
APPLICATION PROCESSING AND CALCULATIONS	REVIEWED BY	
	DATE	08/09/11

PERMIT TO CONSTRUCT EVALUATION (SPRAY BOOTHS)

Applicant's Name

AMERICH CORP.

Company I.D.

59225

Mailing Address

13152 SATICOY, NORTH HOLLYWOOD, CA 91605

Equipment Address

13212 SATICOY, NORTH HOLLYWOOD, CA 91605

EQUIPMENT DESCRIPTION

APPLICATION NO. 524500 (NEW CONSTRUCTION)

SPRAY ROOM, NO. 1, TSE INDUSTRIES, FLOOR TYPE, 14' - 6" L. X 20' - 0" W. X 10' - 0" H., WITH TEN 20" X 20" X 1" EXHAUST FILTERS (STAGE I), TWO 20" X 20" X 2" & TWO 12" X 24" X 2" EXHAUST BAG FILTERS (STAGE II), TWO 24" X 24" X 11.5" & TWO 12" X 24" X 11.5" HEPA EXHAUST FILTERS (STAGE III), ONE 3 H. P. EXHAUST FAN AND A MAKE-UP AIR UNIT WITH A 270,000 MMBTU/HR BURNER BY AAON INC., MODEL 270 SPLIT MANIFOLD.

APPLICATION NO. 524501 (NEW CONSTRUCTION)

SPRAY ROOM, NO. 2, TSE INDUSTRIES, FLOOR TYPE, 14' - 6" L. X 20' - 0" W. X 10' - 0" H., WITH TEN 20" X 20" X 1" EXHAUST FILTERS (STAGE I), TWO 20" X 20" X 2" & TWO 12" X 24" X 2" EXHAUST BAG FILTERS (STAGE II), TWO 24" X 24" X 11.5" & TWO 12" X 24" X 11.5" HEPA EXHAUST FILTERS (STAGE III), ONE 3 H. P. EXHAUST FAN AND A MAKE-UP AIR UNIT WITH A 270,000 MMBTU/HR BURNER BY AAON INC., MODEL 270 SPLIT MANIFOLD.

APPLICATION NO. 524502 (NEW CONSTRUCTION)

OVEN, CURING ROOM NO.1, TSE INDUSTRIES, 14'- 0" L. X 20'- 0" W. X 7'- 0" H., ELECTRICALLY HEATED, 20KW.

APPLICATION NO. 524503 (NEW CONSTRUCTION)

OVEN, CURING ROOM NO.2, TSE INDUSTRIES, 14'- 0" L. X 20'- 0" W. X 7'- 0" H., ELECTRICALLY HEATED, 20KW.

APPLICATION NO. 524498

TITLE V REVISION

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HISTORY

Americh Corp. submitted above permit applications with the District to install two identical new spray booths and two identical new electric ovens.

The company manufactures fiberglass bath tubs at this location and has three active permits from the District to operate spray booths under I. D. # 059225. The facility has decided to install the above equipment to manufacture bath-tubs using a new polyurethane resin and new application method. The company eventually desires to convert the bath tub manufacturing to this new resin system as it will reduce a considerable amount of emissions per bath tub in comparison to the existing polyester resin process. Rule 1162 does not apply to this new polyurethane manufacturing process. Thus, Rule 442 will apply to this new equipment. A separate facility-wide 833 lbs/month VOC limit from the Rule 442 applicable operations will be imposed on the above described equipment.

Americh Corp. has a facility-wide VOC emission cap of 2340 lbs/month (78 lbs/day) for all permitted equipment and associated operations. The applicant has not requested any changes in the facility-wide emission cap under this project. The new equipment will operate under the same facility-wide conditions, thus no VOC emission offsets are required for this project. Rules 442, 1147 and 1171 will apply to the above equipment.

The VOC emissions from the spray booths are expected to be less than 850 lbs/month. The VOC emissions from the curing rooms are expected to be less than 1 lb/day. Thus this equipment is expected to comply with the current BACT requirement for VOC emissions. The use of 2" thick filters and HEPA filters will comply with the PM10 BACT requirements. The use of burners with less than 30 PPMV NOx emissions at 3% O₂ in the make-up air units will provide compliance with the NOx BACT requirements.

The District database shows that the applicant has not received any odor nuisance complaints from the public in the last two years. The company also has not received any Notices to Comply or Notice of Violation in the last two years.

The facility is located in an industrial area and not within 1000 feet from any school. There are no carcinogenic toxic air contaminant emissions associated with this operation. The criteria pollutant emissions from this equipment are expected to be below the Rule 212 threshold limits. Hence, these applications will not require any public notification in accordance with the Rule 212 requirements..

Americh Corp. is a Title V facility. A Title V renewal permit was issued to this facility on November 2, 2010. The proposed permit revision is considered as a "de minimis significant permit revision" to the Title V permit, as described in Regulation XXX evaluation. This is the first revision since the renewal.

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PROCESS DESCRIPTION

Americh Corp. is in the business of manufacturing polyester resin bath tubs. The company desires to install a new bath tub manufacturing line with two spray booths/rooms and two ovens/rooms. The manufacturing process line will use polyurethane resin.

First an acrylic plastic sheet will be thermoformed into the form of a bath tub. It will then be placed on a holding fixture. After being wiped clean with acetone the thermoformed acrylic tub will be placed in a pre-heater [<2 mmBTU/HR burner, Rule 219(b)(2) exempt] to be heated to a temperature of about 125⁰ F. The storage tanks for the polyurethane parts A & B are exempt per R219(m)(20).

The bath tub then will be transferred in the spray booth/room no. 1. The spray room will be humidity and temperature controlled. The bath tub will be coated with the polyurethane coating. The coating will be sprayed with air assisted airless spray equipment, where part A and part B are mixed in 1:1 ratio and applied on the part. After spraying is completed, the bath tub will be transferred to oven no. 1 for curing at about 135⁰ F. The tub will be cooled down in a cooling area.

The bath tub will be then transferred to spray booth/room no. 2. The operator will apply the same resin on the tub with the same type of spray equipment, but this time with fiberglass. The coated bath tub will be transferred to oven no. 2 for curing at about 140⁰ F. After the curing is completed, the bath tub will be cooled and sent for trimming.

OPERATING HOURS

Average: 8 hr/day, 7 day/week, 52 week/year
Maximum: 16 hr/day, 7 day/week, 52 weeks/year

EMISSION CALCULATIONS

The resin is a two part system. Part A contains <100 ppm VOCs. Part B contains $<2\%$ glycol ether but there are no emissions as it is a crosslink agent. Part A contains MDI, a R1401 toxic compound. MDI emissions are expected from the spraying and the curing stages. MDI acts as styrene in the polyester resin. It becomes part of the cured product. PM10 emissions are expected from the spraying operation. The make-up air units in the spray booths are natural gas combustion units and will have combustion emissions associated with them.

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Application No. 524500 (Spray Booth/Room No. 1)

Maximum VOC Emissions:

The company expected to spray maximum 728 lbs of resin (Parts A). The VOC emission per pound of resin is 0.0001 lb/lb. Thus VOC emissions are 0.07 lbs/day. (0.004 lbs/hr)

Average VOC Emissions:

The company expected to spray average 364 lbs. of resin (Parts A). The VOC emission per pound of resin is 0.0001 lb/lb. Thus VOC emissions are 0.04 lbs/day. (0.005 lbs/hr)

Maximum PM10 Emissions:

The company performed a PM10 emission test which indicated 97% transfer efficiency on a bath tub application. The results were reviewed by the District Source Testing Department. However, for the emission calculations only a very conservative 65% transfer efficiency will be considered.

$$R1 = 1400 \text{ lb resin/day} \times 0.65 \text{ solids} \times (1 - 0.65)(0.50 \text{ PM}_{10}/\text{PM}) = 159.25 \text{ lb/day, } 9.95 \text{ lb/hr}$$

$$R2 = R1 (1 - 0.9997) = 159.25 (1 - 0.9997) = 0.05 \text{ lb/day @ } 16 \text{ hr/day} = 0.003 \text{ lb/hr}$$

Average PM10 Emissions:

$$R1 = 700 \text{ lb resin/day} \times 0.65 \text{ solids} \times (1 - 0.65)(0.50 \text{ PM}_{10}/\text{PM}) = 79.63 \text{ lb/day, } 9.95 \text{ lb/hr}$$

$$R2 = R1 (1 - 0.9997) = 79.63 (1 - 0.9997) = 0.025 \text{ lb/day @ } 8 \text{ hr/day} = 0.003 \text{ lb/hr}$$

MDI Emissions, Spray Room #1:

MDI emissions are estimated using the Alliance for Polyurethane Industry's guidelines.

Operating Data:

The following data was obtained from the application material submitted with this application.

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Typical Process Rate	50 tubs/day
Maximum Process Rate	100 tubs/day
Operating Schedule Typical	8 hrs/day, 5 days/week, 50 wks/year
Operating Schedule - Maximum	16 hrs/day, 5 days/week, 52 wks/year
Maximum resin processed (Part A)	728 lbs/day
Maximum resin processed (Part B)	672 lbs/day
% of MDI in binder	23%
Exhaust Flow Rate	2550 cfm
Spray Temperature	296.89 K degrees
Adjustment Factor	0.33
Typical Spraying Time	6.80 hrs/day, 1700 hrs/yr
Maximum Spraying Time	13.60 hrs/day, 3536 hrs/yr
Molecular weight of MDI	250.26 lbs/lbmol
Density of MDI	10.30 lbs/gal
Maximum operating temperature	75 F degrees
Vapor Pressure of MDI @ 296.8889°K	8.9053E-06 mmHg

Equation:
$$L_{sp} = V_{air} \times (1/359) \times (273.15/T_{sp}) \times 60 \times (VP_{MDI}/760) \times MW_{MDI} \times K_{MDI} \times T_{sp}$$

Where:

L_{sp} = emissions from spray coating operation lbs/year
 V_{air} = annual volume of displaced air, cubic feet per min
 T_{sp} = spray temperature, °K
 VP_{MDI} = vapor pressure of MDI at exhaust temperature, mm Hg
 MW_{MDI} = molecular weight of MDI, lb/lbmol
 K_{MDI} = adjustment factor, 0.3275
 t_{sp} = total spray coating time, hrs

Maximum Hourly Emissions:

$$L_{sp} = 2550 \text{ ft}^3/\text{min} \times (1/359) \times (273.15^\circ\text{K}/296.8889^\circ\text{K}) \times (8.9053\text{E}-06 \text{ mm Hg}/760 \text{ mm Hg}) \times 250.26 \times 0.3275 \times 1 = 6.2761\text{E}-06 \text{ lbs/hr}$$

Maximum Daily Emissions:

$$L_{sp} = 2550 \text{ ft}^3/\text{min} \times (1/359) \times (273.15^\circ\text{K}/296.8889^\circ\text{K}) \times (8.9053\text{E}-06 \text{ mm Hg}/760 \text{ mm Hg}) \times 250.26 \times 0.3275 \times 13.60 = 8.5355\text{E}-05 \text{ lbs/day}$$

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Annual Emissions:

$$L_{sp} = 2550 \text{ ft}^3/\text{min} \times (1/359) \times (273.15^\circ\text{K}/296.8889^\circ\text{K}) \times (8.9053\text{E-}06 \text{ mm Hg}/760 \text{ mm Hg}) \times 250.26 \times 0.3275 \times 3536 = 2.2192\text{E-}02 \text{ lbs/year}$$

Application No. 524501 (Spray Booth/Room No. 2)

Maximum VOC Emissions:

The company expected to spray maximum 1456 lbs of resin (Parts A). The VOC emission per pound of resin is 0.0001 lb/lb. Thus VOC emissions are 0.15 lbs/day. (0.01 lbs/hr)

Average VOC Emissions:

The company expected to spray average 728 lbs of resin (Parts A). The VOC emission per pound of resin is 0.0001 lb/lb. Thus VOC emissions are 0.07 lbs/day. (0.01 lbs/hr)

Maximum PM10 Emissions:

The company performed a PM10 emission test which indicated 97% transfer efficiency on a bath tub application. The results were reviewed by the District Source Testing Department. However, for the emission calculations only 65% transfer efficiency will be considered.

$$R1 = 2800 \text{ lb resin/day} \times 0.65 \text{ solids} \times (1-0.65)(0.50 \text{ PM}_{10}/\text{PM}) = 318.5 \text{ lb/day}, 19.90 \text{ lb/hr}$$

$$R2 = R1 (1-0.9997) = 318.5 (1-0.9997) = 0.1 \text{ lb/day @ } 16 \text{ hr/day} = 0.01 \text{ lb/hr}$$

Average PM10 Emissions:

$$R1 = 1400 \text{ lb resin/day} \times 0.65 \text{ solids} \times (1-0.65)(0.50 \text{ PM}_{10}/\text{PM}) = 159.25 \text{ lb/day}, 19.90 \text{ lb/hr}$$

$$R2 = R1 (1-0.9997) = 159.25 (1-0.9997) = 0.05 \text{ lb/day @ } 8 \text{ hr/day} = 0.01 \text{ lb/hr}$$

MDI Emissions:

MDI emissions are estimated using the Alliance for Polyurethane Industry's guidelines.

Operating Data:

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Typical Process Rate	50 tubs/day
Maximum Process Rate	100 tubs/day
Operating Schedule Typical	8 hrs/day, 5 days/week, 50 wks/year
Operating Schedule - Maximum	16 hrs/day, 5 days/week, 52 wks/year
Maximum resin processed (Part A)	1456 lbs/day
Maximum resin processed (Part B)	1344 lbs/day
% of MDI in binder	23%
Exhaust Flow Rate	2550 cfm
Spray Temperature	296.89 K degrees
Adjustment Factor	0.33
Typical Spraying Time	6.80 hrs/day, 1700 hrs/yr
Maximum Spraying Time	13.60 hrs/day, 3536 hrs/yr
Molecular weight of MDI	250.26 lbs/lbmol
Density of MDI	10.30 lbs/gal
Maximum operating temperature	75 F degrees, 296.89 K degrees
Vapor Pressure of MDI @ 296.8889°K	8.9053E-06 mmHg

Equation:
$$L_{sp} = V_{air} \times (1/359) \times (273.15/T_{sp}) \times 60 \times (VP_{MDI}/760) \times MW_{MDI} \times K_{MDI} \times T_{sp}$$

Where:

L_{sp} = emissions from spray coating operation lbs/year
 V_{air} = annual volume of displaced air, cubic feet per min
 T_{sp} = spray temperature, °K
 VP_{MDI} = vapor pressure of MDI at exhaust temperature, mm Hg
 MW_{MDI} = molecular weight of MDI, lb/lbmol
 K_{MDI} = adjustment factor, 0.3275
 t_{sp} = total spray coating time, hrs

Maximum Hourly Emissions:

$$L_{sp} = 2550 \text{ ft}^3/\text{min} \times (1/359) \times (273.15^\circ\text{K}/296.8889^\circ\text{K}) \times (8.9053\text{E}-06 \text{ mm Hg}/760 \text{ mm Hg}) \times 250.26 \times 0.3275 \times 1 = 6.2761\text{E}-06 \text{ lbs/hr}$$

Maximum Daily Emissions:

$$L_{sp} = 2550 \text{ ft}^3/\text{min} \times (1/359) \times (273.15^\circ\text{K}/296.8889^\circ\text{K}) \times (8.9053\text{E}-06 \text{ mm Hg}/760 \text{ mm Hg}) \times 250.26 \times 0.3275 \times 13.60 = 8.5355\text{E}-05 \text{ lbs/day}$$

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Annual Emissions:

$$L_{sp} = 2550 \text{ ft}^3/\text{min} \times (1/359) \times (273.15^\circ\text{K}/296.8889^\circ\text{K}) \times (8.9053\text{E-}06 \text{ mm Hg}/760 \text{ mm Hg}) \times 250.26 \times 0.3275 \times 3536 = 2.2192\text{E-}02 \text{ lbs/year}$$

Application No. 524502 (Oven/Room No. 1)

MDI Emissions:

MDI emissions are estimated using the Alliance for Polyurethane Industry's guidelines.

Operating Data:

Typical Process Rate	50 tubs/day
Maximum Process Rate	100 tubs/day
Operating Schedule Typical	8 hrs/day, 5 days/week, 50 wks/year
Operating Schedule - Maximum	16 hrs/day, 5 days/week, 52 wks/year
Maximum resin processed (Part A)	728 lbs/day
Maximum resin processed (Part B)	672 lbs/day
% of MDI in binder	23%
Exhaust Flow Rate	2550 cfm
Spray Temperature	296.89 K degrees
Adjustment Factor	0.3760
Typical Spraying Time	6.80 hrs/day, 1700 hrs/yr
Maximum Spraying Time	13.60 hrs/day, 3536 hrs/yr
Molecular weight of MDI	250.26 lbs/lbmol
Density of MDI	10.30 lbs/gal
Maximum operating temperature	135 F degrees, 330.22 K degrees
Vapor Pressure of MDI @ 330.22 °K	3.8460E-04 mmHg, 5.0605E-07 atm
Airflow Speed	34.16 m/sec
Total Surface Area	3217 sq. ft., 981 sq. meters
lack Free Time	15 sec

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Equation: $w = 25.4 \times VP_{MDI} \times (MW_{MDI}/T_{proc}) \times (U)^{0.78} \times S_A \times t_{TF} \times K_{MDI} \times T_{sp} \times 1\text{lb}/454 \text{ g}$

Where:

VP_{MDI} = V.P. of MDI at exhaust temperature, atm

MW_{MDI} = molecular weight of MDI, lb/lbmol

T_{proc} = Process temperature in Kelvin

U = Airflow speed in in/sec

S_A = Exposed surface area in m^2

K_{MDI} = Adjustment Factor, 0.376

t_{TF} = Tack free time in seconds

T_{sp} = Total spray coating time, hrs

Maximum Hourly Emissions:

$$W = 25.4 \times (5.0605\text{E-}07 \text{ atm}) \times (250.26 \text{ lbs/lbmol}/330.22 \text{ }^\circ\text{K}) \times (34.16)^{0.78} \times 981 \text{ sq. m.} \times 15 \text{ sec} \times 0.376 : \\ \times (1 \text{ lb}/454 \text{ g}) = 1.2427\text{E-}04 \text{ lbs/hr.}$$

Maximum Daily Emissions:

$$W = 25.4 \times (5.0605\text{E-}07 \text{ atm}) \times (250.26 \text{ lbs/lbmol}/330.22 \text{ }^\circ\text{K}) \times (34.16)^{0.78} \times 981 \text{ sq. m.} \times 15 \text{ sec} \times 0.376 \\ \times 13.6 \times (1 \text{ lb}/454 \text{ g}) = 1.6900\text{E-}03 \text{ lbs/day.}$$

Annual Emissions:

$$L_{sp} = 2550 \text{ ft}^3/\text{min} \times (1/359) \times (273.15^\circ\text{K}/296.8889^\circ\text{K}) \times (8.9053\text{E-}06 \text{ mm Hg}/760 \text{ mm Hg}) \times 250.26 \\ \times 0.3275 \times 3536 = 2.2192\text{E-}02 \text{ lbs/year}$$

Application No. 524503 (Oven/Room No. 2)

MDI Emissions:

MDI emissions are estimated using the Alliance for Polyurethane Industry's guidelines.

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Operating Data:

Typical Process Rate	50 tubs/day
Maximum Process Rate	100 tubs/day
Operating Schedule Typical	8 hrs/day, 5 days/week, 50 wks/year
Operating Schedule - Maximum	16 hrs/day, 5 days/week, 52 wks/year
Maximum resin processed (Part A)	1456 lbs/day
Maximum resin processed (Part B)	1344 lbs/day
% of MDI in binder	23%
Exhaust Flow Rate	2550 cfm
Spray Temperature	296.89 K degrees
Adjustment Factor	0.3810
Typical Spraying Time	6.80 hrs/day, 1700 hrs/yr
Maximum Spraying Time	13.60 hrs/day, 3536 hrs/yr
Molecular weight of MDI	250.26 lbs/lbmol
Density of MDI	10.30 lbs/gal
Maximum operating temperature	140 F degrees, 333 K degrees
Vapor Pressure of MDI @ 330.22 °K	5.0830E-04 mmHg, 6.6882E-07 atm
Airflow Speed	34.16 m/sec
Total Surface Area	3217 sq. ft., 981 sq. meters

Equation:
$$W = 25.4 \times VP_{MDI} \times (MW_{MDI}/T_{proc}) \times (U)^{0.78} \times S_A \times t_{TF} \times K_{MDI} \times T_{sp} \times 1\text{lb}/454\text{ g}$$

Where:

VP_{MDI} = V.P. of MDI at exhaust temperature, atm

MW_{MDI} = molecular weight of MDI, lb/lbmol

T_{proc} = Process temperature in Kelvin

U = Airflow speed in in/sec

S_A = Exposed surface area in m^2

K_{MDI} = Adjustment Factor, 0.376

t_{TF} = Tack free time in seconds

T_{sp} = Total spray coating time, hrs

Maximum Hourly Emissions:

$$W = 25.4 \times (6.6882E-07 \text{ atm}) \times (250.26 \text{ lbs/lbmol}/333 \text{ °K}) \times (34.16)^{0.78} \times 981 \text{ sq. m.} \times 300 \text{ sec} \times 0.381 \times (1 \text{ lb}/454 \text{ g}) = 1.6503E-04 \text{ lbs/hr.}$$

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Maximum Daily Emissions:

$$W = 25.4 \times (6.6882\text{E-}07 \text{ atm}) \times (250.26 \text{ lbs/lbmol}/333 \text{ }^\circ\text{K}) \times (34.16)^{0.78} \times 981 \text{ sq. m.} \times 300 \text{ sec} \times 0.381 \times 13.6 \times (1 \text{ lb}/454 \text{ g}) = 2.2444\text{E-}03 \text{ lbs/hr.}$$

Annual Emissions:

$$W = 25.4 \times (6.6882\text{E-}07 \text{ atm}) \times (250.26 \text{ lbs/lbmol}/333 \text{ }^\circ\text{K}) \times (34.16)^{0.78} \times 981 \text{ sq. m.} \times 300 \text{ sec} \times 0.381 \times 3536 \times (1 \text{ lb}/454 \text{ g}) = 5.8355\text{E-}04 \text{ lbs/hr.}$$

COMBUSTION EMISSION CALCULATIONS (SPRAY ROOMS 1 & 2)

A/N 524500-1

Spray Booth/Room

@

	maximum	normal		
hr/dy	24	24	max heat input	2.70E+05 (BTU/hr)
<u>dv/wk</u>	7	7	<u>gross heating value</u>	1050 (BTU/scf)
<u>wk/yr</u>	52	52		
<u>load</u>	100%	100%		

	Emission	MAX	AVE	MAX	30-DAY	MAX	MAX
	Factors	(lb/hr)	(lb/hr)	(lb/dy)	(lb/dy)	(lb/yr)	(ton/yr)
SO ₂ (R1)	0.6	0.000	0.000	0.004	NA	1	0.001
SO ₂ (R2)	0.6	0.000	0.000	0.004	0.004	1	0.001
NO ₂ (R1)	38.85	0.010	0.010	0.240	NA	87	0.044
NO ₂ (R2)	38.85	0.010	0.010	0.240	0.240	87	0.044
CO (R1)	35	0.009	0.009	0.216	NA	79	0.039
CO (R2)	35	0.009	0.009	0.216	0.216	79	0.039
N ₂ O (R1)	2.2	0.001	0.001	0.014	NA	5	0.002
N ₂ O (R2)	2.2	0.001	0.001	0.014	0.014	5	0.002
PM, PM ₁₀ (R1=R2)	7.5	0.002	0.002	0.046	0.046	17	0.008
CO ₂ (R1=R2)	0.000012	0.000	0.000	0.000	0.000	0	0.000
TOC (R1=R2)	7	0.002	0.002	0.043	0.043	16	0.008
ethyl benzene	0.0095	2.4E-06	2.4E-06	5.9E-05	NA	2.13E-2	1.07E-5
acetaldehyde	0.0043	1.1E-06	1.1E-06	2.7E-05	NA	9.66E-3	4.83E-6
acrolein	0.0027	6.9E-07	6.9E-07	1.7E-05	NA	6.07E-3	3.03E-6
benzene	0.008	2.1E-06	2.1E-06	4.9E-05	NA	1.80E-2	8.99E-6
formaldehyde	0.017	4.4E-06	4.4E-06	1.0E-04	NA	3.82E-2	1.91E-5
napthalene	0.0003	7.7E-08	7.7E-08	1.9E-06	NA	6.74E-4	3.37E-7
PAH's	0.0001	2.6E-08	2.6E-08	6.2E-07	NA	2.25E-4	1.12E-7
toluene	0.0366	9.4E-06	9.4E-06	2.3E-04	NA	8.22E-2	4.11E-5
xylenes	0.0272	7.0E-06	7.0E-06	1.7E-04	NA	6.11E-2	3.06E-5

NO ₂ @ 3% excess O ₂ ----->>	29.93	(ppmv)	SO ₂ @ 3% excess O ₂ ----->>	0.33	(ppmv)
CO @ 3% excess O ₂ ----->>	44.29	(ppmv)	PM @ 12% CO ₂ ----->>	5.5E-09	(grain/ft ³)

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TOXIC EMISSIONS:

The coatings contain MDI (CAS # 101-68-8, chronic). The worst case emissions of MDI are 2.2444E-03 lbs/day and 5.8355E-01 lbs/year. The Tier 1 screening levels at 25 meter receptor are 23.1 lbs/year. Thus, this equipment is expected to comply with the Rule 1401 requirements.

From the previous experience of emission calculations, it is concluded that the toxic emissions from the natural gas combustion from a 270,000 BTU/HR burner are expected to comply with the Rule 1401 requirements.

RULES/REGULATION EVALUATION

□RULE 212, PUBLIC NOTIFICATION

√SECTION 212(c)(1):

This section requires a public notice for all new or modified permit units that may emit air contaminants located within 1,000 feet from the outer boundary of a school. This source is not located within 1,000 feet from the outer boundary of a school. Therefore, public notice will not be required by this section.

√ SECTION 212(c)(2):

This section requires a public notice for all new or modified facilities which have on-site emission increases exceeding any of the daily maximums as specified in subdivision (g). As shown in the following table, the emission increases from this facility are below the daily maximum limits specified by Rule 212(g). Therefore, these applications will not be subject to this section.

LB/DAY	CO	NOX	PM ₁₀	ROG	Lead	SOX
MAX. LIMIT	220	40	30	30	3	60
INCREASES	0.44	0.48	0.20	0.32	0	0

√ SECTION 212(c)(3):

Please, see Rule 1401 evaluation section.

√

SECTION 212(g):

This section requires a public notice for all new or modified sources which undergo construction or modifications resulting in an emissions increase exceeding any of the daily maximum specified in the table below. As shown in the following table, the emission increases from a source are below the daily maximum limits specified by Rule 212(g). Therefore, public notice will not be required by this section.

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LB/DAY	CO	NOX	PM₁₀	ROG	Lead	SOX
MAX. LIMIT	220	40	30	30	3	60
INCREASES	0.22	0.24	0.17	0.20	0	0

▣ **RULES 401 & 402, VISIBLE EMISSIONS & NUISANCE**

AQMD database has no records of any visible emissions or nuisance violations against this company.

▣ **RULE 1132, FURTHER CONTROL OF VOC EMISSIONS FROM HIGH EMITTING SPRAY BOOTH FACILITIES**

The facility VOC emission cap exempts this facility from these rule requirements.

▣ **RULE 442, USAGE OF SOLVENTS**

The VOC emissions from the use of polyurethane materials and acetone are negligible. The company will comply with the Rule 442 under subparagraph (d)(2) by not emitting VOCs in excess of 833 pounds per month from the use of VOC-containing materials, equipment or processes subject to this rule. A facility-wide permit condition will be added to emit less than 833 pounds of VOC from equipment and operations subject to this rule.

▣ **RULE 1147, NOX REDUCTIONS FROM MISCELLANEOUS SOURCES**

The burner manufacturer for the air make-up units has guaranteed NO_x emissions to be <30 ppm corrected to 3% O₂. A permit condition will be imposed to source test these units for the NO_x emissions.

▣ **RULE 1171, SOLVENT CLEANING OPERATIONS**

The applicant will be in compliance with these requirements as acetone, an exempt VOC, will be used for clean-up solvent.

REGULATION XIII

▣ **RULE 1303(a), BEST AVAILABLE CONTROL TECHNOLOGY (BACT)**

(a) VOC EMISSIONS

Since the VOC emissions from the equipment and the project will not exceed 667 lbs/month, the installation and operation of add-on control equipment is not achieved in practice for this category of source (spray booths). Also, VOC content of the coatings complied with the rule requirements, which is considered compliance with the BACT requirements.

(b) PM₁₀ EMISSIONS (SPRAY BOOTHS)

The use of three stage filtering system with the HEPA filters satisfies BACT requirement for PM₁₀ emissions.

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(a) NO_x EMISSIONS

Thus, NO_x emissions are expected to be <1 lb/day. Hence BACT is not triggered. However, the burner manufacturer has guaranteed NO_x emissions to be <30 ppm corrected to 3% O₂. This will comply with the provisions of the current BACT requirements.

▣ **RULE 1303(b)(1), MODELING**

Modeling is not required for <0.2 lb/hr NO_x, <11.0 lb/hr CO and <1.2 lb/hr PM₁₀ emission increases, thus this project complies with modeling requirements.

▣ **RULE 1303 (b)(2), EMISSION OFFSETS**

The emission increases are within the threshold limit for this facility. Thus, no emission offsets are required.

▣ **RULE 1401, NEW SOURCE REVIEW OF CARCINOGENIC AIR CONTAMINANTS**

As discussed in this evaluation report, this equipment is expected to comply with the rule requirements.

REGULATION XXX

The proposed project is considered as a “de minimis significant permit revision” to the renewed Title V permit issued to this facility on 11/02/2010. Rule 3000(b)(6) defines a “de minimis significant permit revision” as any Title V permit revision where the cumulative emission increases on non-RECLAIM pollutants or hazardous air pollutants (HAP) from these permit revisions during the term of the permit are not greater than any of the following emission threshold levels:

<u>Air Contaminant</u>	<u>Daily Maximum (lbs/day)</u>
HAP	30
VOC	30
NO _x	40
PM ₁₀	30
SO _x	60
CO	220

Rule 3003(j) specifies that a proposed permit for the initial Title V permit shall be submitted to EPA for review. To determine if a project qualifies for a “de minimis significant permit revision”, emission increases resulting from all permit revisions that are made after the submittal of proposed permit to EPA shall be accumulated and compared to the above threshold levels. This is the first permit revision to the Title V renewal Permit. The cumulative emission increases resulting from this proposed permit revision are summarized as follows:

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Revision	HAP	VOC	NOx	PM₁₀	SOx	CO
1st Permit Revision. Add two spray booths and two ovens (A/N 524500/1/2/3)	0	0.1	0.16	3.9	0	0
Cumulative Total	0	0.22	0.16	0.15	0	0
Maximum Daily	30	30	40	30	60	220

CONCLUSIONS/RECOMMENDATIONS

The proposed project is expected to comply with all applicable District Rules and Regulations. Since the proposed project is considered as a “de minimis significant permit revision”, it is exempt from the public participation requirements under Rule 3006 (b). A proposed permit incorporating this permit revision will be submitted to EPA for a 45-day review pursuant to Rule 3003(j) in conjunction with the Rule 212 public notice. If EPA does not raise any objections within the review period and upon completion of the Rule 212 public notice period, a revised Title V permit will be issued to this facility.